

Bilcare Technologies is a division of Bilcare Ltd. focused on creating next-generation anti-counterfeiting, security, and brand protection solutions for a broad range of industry sectors.

With breakthrough research in nanotechnology, Bilcare has developed a unique technology-nonClonableID™ - that enables products to be authenticated as they move through the supply chain to the end consumer.



nonClonableID™ LABEL WITH BARCODE



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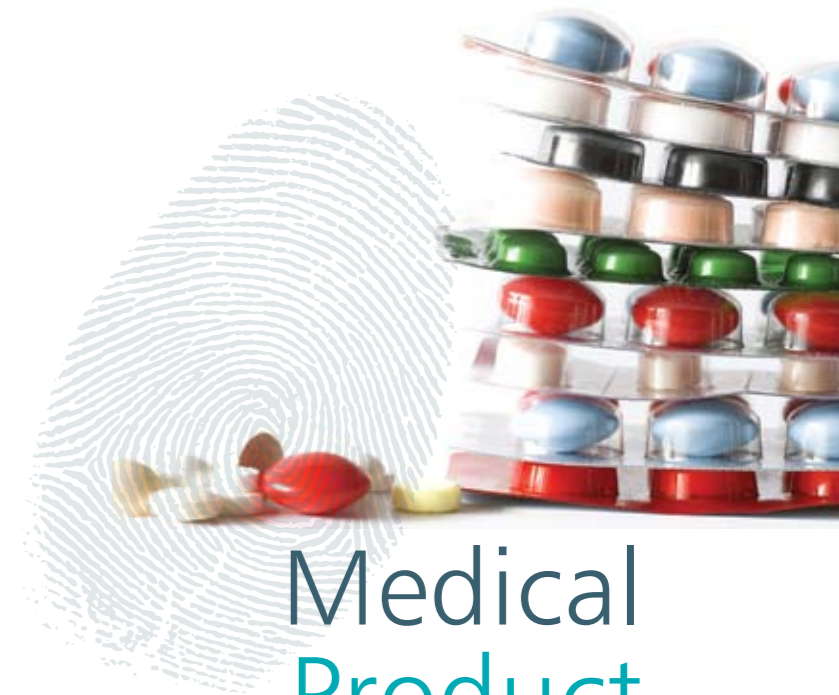
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Bilcare nonClonableID™



Medical Product Security

Counterfeit drugs in legitimate drug supply

- \$12M in Counterfeit Drugs Seized in Southeast Asia; January 28, 2010
- Counterfeit Drug Ring Busted in Montreal; August 6, 2009
- Counterfeit Drugs Seized in Kenya: July 30, 2009
- Medical Sales Representative Caught Selling Fake Flu Vaccines; July 28, 2009
- Counterfeit Anti-malarial Drugs Found in Ghana; July 22, 2009
- 2 Million Counterfeit Needles Found in Europe: July 9, 2009

These are just some of the key incidents of counterfeit drugs in the legitimate drug supply documented by the Counterfeit Drug Incident Encyclopedia.

Extent of the problem

With the help of technology, counterfeiters are becoming more sophisticated and capable thus making their fake goods hard to detect.

The World Health Organization (WHO) estimates that up to 15% of the \$500bn world pharmaceutical market is counterfeit (up to 25% in some countries).

According to the Pharmaceutical Security Institute (PSI), counterfeiters sold more than 600 different types of branded, generic and over-the-counter drugs in 2007 (up more than 14 percent from 2006), including expensive lifestyle drugs, inexpensive pain relievers, and essential medicines.



Impacting brand reputation and revenues

Are these issues impacting your brand reputation and revenues?

- Counterfeits affecting your brand
- Look-alikes riding on your brand
- Revenue leakages from:
 - Imitation/spurious drugs
 - Product overruns
 - Drugs diverted from institutions and doctors
 - Drugs diverted within distributed channels
 - Expired recycled products
- Inadequate supply chain visibility and security
- Inability to authenticate products through the supply chain
- Inadequate control mechanism in contract manufacturing
- Loosely controlled reverse supply chain



Current ecosystem proliferates counterfeiting

Pharmaceutical counterfeiting is a serious global problem. The pharmaceutical industry is facing significant challenges in its ability to combat counterfeiting amidst the complexity of globally integrated supply chains.

- Problems driving the growth of counterfeiting
- Limited end-user ability to recognize counterfeit from original
 - More outsourcing resulting in less controls
 - Easy availability of bulk supplies to manufacturers
 - Fragmented and parallel distribution channels
 - High distribution margin offered by counterfeiters
 - Vulnerable institutional sales with easy access to regular channels
- To protect against the increasing threat of counterfeiting, companies need to adopt a holistic approach and build a secure ecosystem to prevent breaches right from the point-of-origin to the point-of-use.



A comprehensive approach

Bilcare Technologies offers a comprehensive solution with multiple checkpoints within the supply chain to identify counterfeits. It can also address unauthorized activities of players within the legal pharmaceutical supply chain. Bilcare adopts three approaches to effectively address unauthorized activities by channel partners and secure the supply chain:

- **Secure Process Control and Authentication**
Product sample authentication at targeted checkpoints in the distribution chain results in evidence-based “policing” of the legal system from counterfeit infiltration.
- **Secure Systemic Lock**
 - Our solution creates a stakeholder ecosystem that prevents the counterfeit in scope with direct impact on product overruns, drug diversions and recycled drugs
 - A claims gateway tracks all claims made by stockists or other channel partners thus acting like a system deterrent to malpractice.
 - A compliance gateway tracks the drug consumption patterns of enrolled patients driving higher patient compliance.
- **Secure Track-and-Trace**
A four-dimensional (What, Why, When, Where) EPICS-standard compliant object event repository for identifying the areas where counterfeit products enter the supply chain, Product Tracking & Authentication (PTA) and business intelligence (e.g. diversion reporting, product recall support, chargeback claims reconciliation).



Capabilities for the brand owner

Bilcare’s comprehensive approach leverages Secure Process Control, Secure Systemic Lock, Authentication and Track-and-Trace to offer the following Solution Capability for the brand owners:

- Irreproducible and secure product authentication online from remote locations through a handheld device.
- Four-dimensional product track-and-trace – enables building a log of all events in the product lifecycle from the point-of-manufacture to the point-of-sale.
- Secure supply chain – product authentication and track-and-trace through an auditing program provides the ability to detect counterfeit products.
- Effective claims and promotional products management.
- Ability to take corrective and preventive action through alerts and reporting mechanisms that help in plugging the loopholes in the supply chain.
- Effective auditing programs.
- Business intelligence – reports on performance of supply chain partners and anti-counterfeiting program effectiveness.



How it works

The solution enables a systemic way of tracking activities in the supply chain through multiple checkpoints and provides an indication to the brand owner about the possible locations where counterfeiters are getting in.



nonClonableID™ LABEL WITH BAR CODE

The nonClonableID™ label is a unique, materials-based fingerprint consisting of randomly distributed particles and cannot be reproduced even by Bilcare.

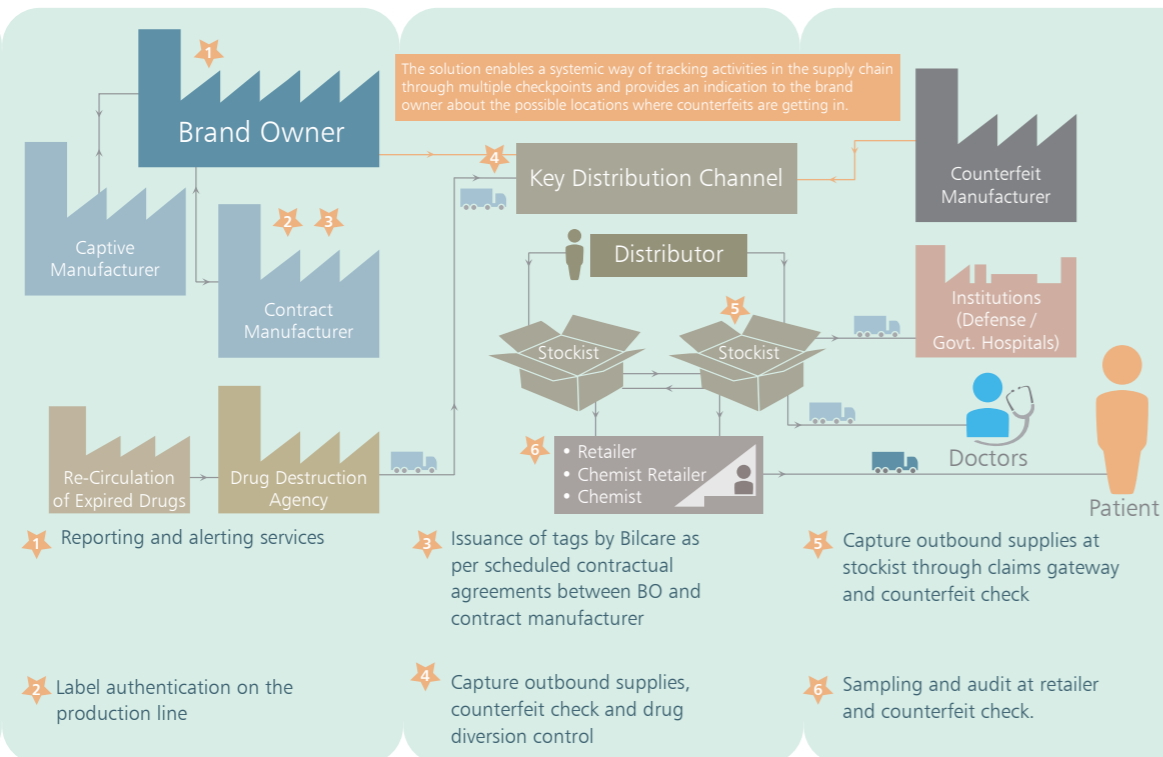
Bilcare's solution combats counterfeiting through the implementation of its unique nonClonableID™ technology. Integrated as unit-level labels on blister packs, secondary packaging or tamper-evident closure labels, nonClonableID™ enables identification, authentication and brand protection. The system enables real-time authentication across the supply chain from a central database through handheld portable readers.

Bilcare's system is designed to be compatible with the upcoming legislation in Europe and can also integrate with national and regional labeling legislations where required.

Secure management of the supply chain

Enhanced brand recognition in the marketplace, brand loyalty from patients and an ecosystem that discourages counterfeiters.

- Secure process control prevents counterfeit products from entering the supply chain, plugs diversion in the distribution channel and tracks expired drugs.
- Secure systemic lock prevents an unauthorized manufacturing overrun and prevents recycled, expired drugs from entering the legal distribution channel.
- Product authentication capability on the ground secures brand value.



Tracking of potential sources of counterfeits in the distribution chain

Paving the way for a robust ecosystem

Brand Owners

- Prevents counterfeits from affecting the brand
- Sales increase / increased sales volume at higher price
- Prevents counterfeit products from entering the supply chain
- Increased profitability
- Enhanced brand image
- Better control over material consumption
- Cleaned up distribution channel
- Better market penetration due to focused regional promotions

- Safeguard sales in unintended markets
- Reduced product claims
- Reduction in claim processing expenses

Government

- Enhanced country/ government image
- Protection of citizen health and assures government credibility
- Increased exports
- Reduced economic offence in the distribution channel
- Enhanced regulatory control in the distribution channel

- Right price for consumers and better visibility of product flow
- Stops misuse of government funds
- Better tracking in government audit programs (Drug Inspectors)
- Increases legal sales
- Pushes back illegal channels

Consumer

- Assured genuine medicine
- Improved health outcome
- Ensures value for money

