

**KNOW YOUR DRUG(KYD)
DRUG SUPPLY CHAIN MANAGEMENT SYSTEM
FOR COUNTERFEIT DRUGS USING A HYBRID
BLOCKCHAIN SYSTEM**

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Abstract

Counterfeit drugs are the one of most serious problems in pharmaceutical industry nowadays. According to health reports of world health organization and the health research funding organizations, nearly 10-30% of the drugs are fake in developing countries. This problem is most prevalent in such areas like drug surveillance and regulation needs to be improved and where drugs are in high demand, but mostly they remain unaffordable. When comparing with traditional drugs these counterfeit drugs can produce various side effects to human health. Developing country like Sri Lanka also doesn't have a proper way to track and trace drugs or to protect from this threat using any other available methods. Because counterfeiters can inject their counterfeit drugs in to drug supply chain wherever it's vulnerable within the chain. So, identifying this problem as a timely need author has chosen to research and develop a proper system for counterfeit drugs problem by overcoming drawbacks of existing systems.

This project, Know Your Drug system is designed and implemented as more transparent and trustful way to track and trace the drugs and secure the drug supply chain from counterfeiters. Implemented supply chain will overcome the trust barriers in the existing drug supply chains where an administrator or any kind of third-party intruder cannot exploit the system. Author has used a hybrid-blockchain system to approach and give solution for these conditions. Furthermore, it has given a solution for data tampering issues facing when using the private blockchains. Though, Know Your Drug system has developed more towards general usage where manufactures, distributors, wholesalers and retailers come in to play, this research paper will discuss how it is used to track and trace counterfeit drugs in Sri Lanka according to Sri Lankan regulations and systems for the drug supply chain.

Keywords: Blockchain, Hybrid-Blockchain, Drug Domain, Healthcare