

Blockchain Technology for Drug Fraud Detection and Tracking

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Abstract: *As concerns about medication safety have increased, so too has the demand for traceability and transparency in pharmaceutical supply chains. Traditional systems are based on distributed or centralized databases, however these often face problems including poor stakeholder confidence and data manipulation. Furthermore, issues with data privacy, transparency, and authenticity plague centralized systems. Our method leverages smart contracts to provide a secure, immutable transaction record accessible to all participants, eliminating intermediaries and ensuring data provenance. We provide a detailed description of the system's architecture and operation, demonstrating how it increases supply chain confidence and transparency. Testing and validation confirm the system's effectiveness, and cost and security assessments show that it is both safe and effective. This decentralized approach offers a practical means of eliminating counterfeits and ensuring safe, verifiable pharmaceutical supply from production to end use.*

Keywords: Blockchain, healthcare, traceability, trust, security, medicine counterfeiting

