AI Based Pharmaceutical Product Safety and Compliance System

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Abstract: *The Pharmaceutical Product Safety and Compliance System (PPSCS) is a web-based application designed to enhance the safety, quality assurance, and regulatory compliance of pharmaceutical products. The system provides an integrated platform to manage product registration, batch tracking, quality control records, compliance audits, and adverse drug reaction reporting.*

This system ensures proper monitoring of drug manufacturing processes in accordance with Good Manufacturing Practices (GMP) and regulatory guidelines. It enables real-time tracking of pharmaceutical batches, helping organizations quickly identify and recall defective or expired products. The system also maintains detailed audit logs and inspection reports to support transparency and regulatory verification.

Developed using modern web technologies, the system incorporates secure authentication, role-based access control, and centralized data management to reduce manual errors and improve operational efficiency. By digitizing safety and compliance processes, the proposed solution strengthens pharmaceutical governance, enhances patient safety, and supports adherence to national and international regulatory standards.

Keywords: Pharmaceutical Safety, Regulatory Compliance, Batch Tracking System, Pharmacovigilance.

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72