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CSV: Improving Data Integrity and Compliance in Chemical Research

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Abstract: *Chemical research must use Computer System Validation (CSV) to ensure data accuracy, operational efficacy, and regulatory compliance. CSV provides a framework for confirming the software, analytical instruments, and laboratory information management systems (LIMS) utilized in chemical studies. This study investigates how CSV lowers data integrity concerns, ensures adherence to regulatory norms such as FDA 21 CFR Part 11 and Good Laboratory Practices (GLP), and more to enhance reproducibility in chemical research. Examples from the pharmaceutical and industrial chemistry domains demonstrate how CSV can boost the reliability of experimental results and streamline workflows.*
The application of CSV in chemical research is essential for promoting accountability, transparency, and reproducibility, which raises the general legitimacy and conformance of chemical investigations. This article illustrates how CSV technologies enhance the scientific rigor and regulatory alignment of chemical research in both academic and industrial environments through case studies and real-world applications..

Keywords: CSV, Chemical research, LIMS, FDA 21 CFR Part 11, GLP, Molecular modeling, CADD, and Drug development.

Graphical Abstract:

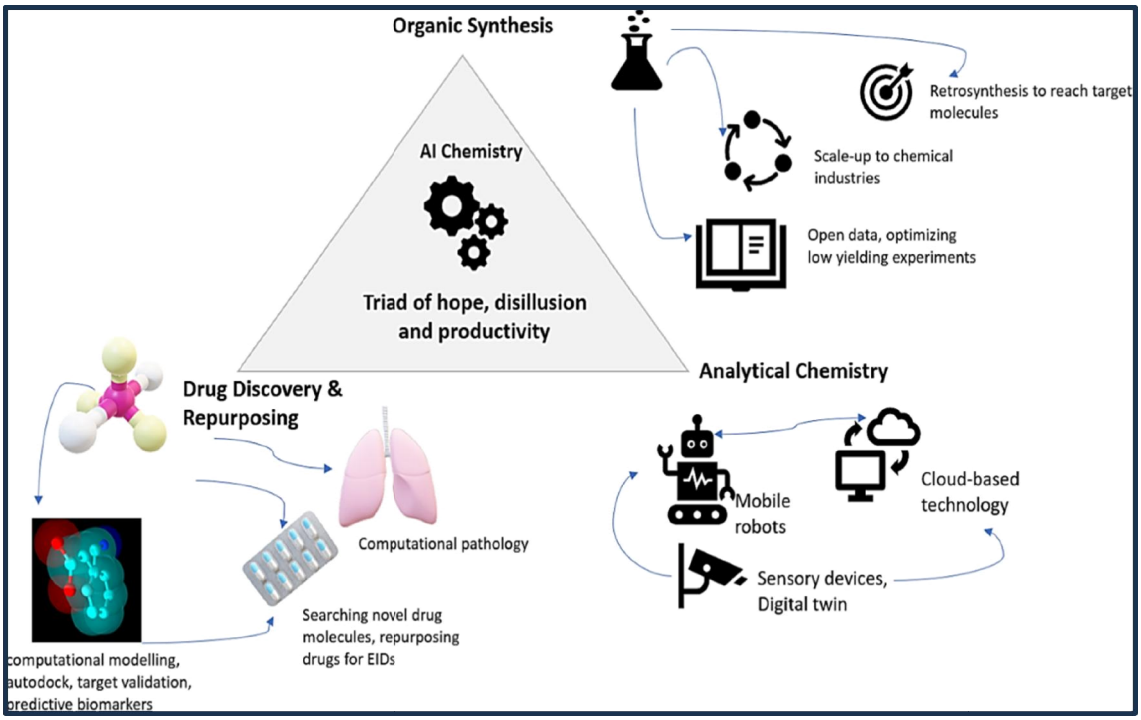

Figure 1: Operation of CSV in Pharma company

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