Toxicology: Open Access

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Toxicology, the study of the adverse e ects of chemical substances on living organisms, has traditionally relied on experimental models [1], including animal studies and in vitro tests. While these methods have provided valuable insights into the mechanisms of toxicity, they are o en time-consuming, expensive, and limited in scope. In recent years, bioinformatics the application of computational tools to biological data—has emerged as a powerful alternative to traditional methods, enabling researchers to analyze large datasets and identify patterns that might otherwise go unnoticed [2]. Bioinformatics in toxicology combines the use of high-throughput screening, molecular data integration, and computational models to assess the toxicity of substances and predict their e ects on human health. By leveraging